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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/456,230	12/07/1999	MYLES WAKAYAMA	36159/JWE/B600	6158

7590 12/09/2003

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EXAMINER

TRA, ANH QUAN

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/456,230

Applicant(s)

WAKAYAMA ET AL.

Examiner

Quan Tra

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31,32 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31,32 and 35-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/2003 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 31, 32, 35, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozu (USP 5663687) (previous cited) in view of Ghoshal (USP 5068628) (previous cited) and Percey (USP 6400735) newly cited).

As to claim 31, figure 3 shows a phase lock loop for providing an output signal with a desired characteristic frequency that is an integer, $N(M)$, multiple of a characteristic frequency of an input signal, the phase lock loop comprising: a voltage controlled oscillator (313) generating one or more oscillator signals, wherein each of the one or more oscillator signals are associated with $M(8)$ phases of the desired characteristic frequency of the output signal; and a phase detector (311) for comparing a phase or the frequency characteristic of the input

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signal to a phase or frequency characteristic of a particular one of the one or more oscillator signals to the input signal.

Thus, figure 3 shows all limitations of the claim except for a multiplexer for selecting a particular one or more oscillator signals. However, Ghoshal's figure 2 shows a phase locked loop circuit having a voltage control oscillator (46-56) having plurality of outputs for generating plurality of difference phase signals; a multiplexer circuit (78) for selecting particular one of output signals in order for generating a desired output signal. Therefore, it would have been obvious to one having ordinary skill in the art to use Ghoshal's oscillator circuits (46-56) and selector circuit (78) for Kozu's oscillator circuit (313) for the purpose having plurality of options to select the phase of the output signal.

Thus, the combination of Kozu and Ghoshal references shows all limitations of the claim except for the multiplexer selects the particular one or more oscillator signal based on a Gray Code. However, Percey's teaches in column 2, line 66 to column 3, line 2, that Gray code multiplexer provides selected signal without glitches in compare with regular multiplexer (i.e. figure 2). Therefore, it would have been obvious to one having ordinary skill in the art to use Gray code multiplexer for the multiplexer in the combination of Kozu and Ghoshal references for the purpose of providing a glitch free output clock.

As to claim 32, the modified Kozu circuit shows a multiplexer (Ghoshal's 78) for selecting an output signal from the one or more oscillator signals; and a divider circuit for reducing a characteristic frequency of the output signal to the desired characteristic frequency.

As to claim 35, the modified Kozu circuit shows one or more divider circuits (314) for reducing the characteristic frequency of at least one of the one or more oscillator signals.

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As to claim 36, the modified Kozu circuit shows the one or more divider circuits (:8M) for reducing the characteristic frequency of the particular one of the oscillator signals by an integer, M (8), factor and an integer, N (M), factor.

As to claim 37, the modified Kozu circuit shows a loop filter (312) for increasing or decreasing a characteristic frequency of the voltage controlled oscillator signals based on the comparison of the phase or frequency characteristic of the input signal to the phase or frequency characteristic of the particular one of the one or more reference clock signals by the detector.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 703-308-6174. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 703-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Quan Tra
Patent Examiner

December 3, 2003